WO 2005/057008 PCT/CA2004/002099

WE CLAIM:

1. A turbine powered by wind comprising a rotor on a shaft, said rotor having blades extending outward therefrom, said blades being shaped to rotate said shaft when said wind is sufficiently strong, said shaft being rotatably

- supported on a support that can move said blades in a yaw movement into and out of said wind as said wind changes direction, said turbine having a pitch adjustment mechanism to change a pitch of said blades, said shaft having a ring concentrically mounted thereon, a plurality of rotators mounted to removably contact said ring, said rotators being connected to drive energy producing equipment, said rotators being constructed to rotate with said ring when said
- equipment, said rotators being constructed to rotate with said ring when said rotators are in contact therewith, thereby driving said energy producing equipment when said wind rotates said blades, a controller connected to control a speed of said turbine when said wind is sufficiently strong and to independently control each contact between said rotators and said ring.
- 15 2. A wind turbine as claimed in Claim 1 wherein said rotor has a hub thereon located between said shaft and said blades.
 - 3. A turbine as claimed in Claim 2 wherein each blade has a post extending outward from said hub with a blade-shaped portion mounted on an outer portion of said post.
- 20 4. A turbine as claimed in Claim 1 wherein said ring has a plurality of spokes extending outward from a central portion thereof thereon to support said ring.
 - 5. A turbine as claimed in any one of Claims 1, 2 or 4 wherein there are three blades mounted equidistant from one another on said turbine.
- 25 6. A turbine as claimed in any one of Claims 1, 2 or 4 wherein said ring has a surface extending parallel to a surface of said shaft and the rotators are tires.
 - 7. A turbine as claimed in any one of Claims 1,2 or 4 wherein said rotators are one selected from the group of tires, metal wheels and gears.
- 30 8. A turbine as claimed in any one of Claims 1, 2 or 4 wherein the ring is a gear located on a periphery of a plate that is concentrically mounted on said shaft and the rotators are gears that intermesh with the gear on the plate.
 - 9. A wind turbine as claimed in any one of Claims 1, 2 or 4 wherein said ring is made from metal and said rotators are metal wheels.

WO 2005/057008 PCT/CA2004/002099

5

10. A turbine as claimed in any one of Claims 1, 2 or 4 wherein said controller is connected to control brakes for said turbine.

- 11. A turbine as claimed in any one of Claims 1, 2 or 4 wherein said ring has a significantly smaller diameter than a circumference through tips of said blades.
- 12. A turbine as claimed in any one of Claims 1, 2 or 4 wherein said ring is mounted on said shaft separately from said blades.
- 13. A method of operating a turbine powered by wind, said turbine having a rotor on a shaft, said rotor having blades extending outwards therefrom, said 10 blades being shaped to rotate said shaft when said wind is sufficiently strong, said shaft being rotatably supported on a support that can move said blades in a yaw movement into and out of said wind as said wind changes direction, said turbine having a pitch adjustment mechanism, said shaft having a ring concentrically mounted thereon, a plurality of rotators mounted to removably 15 contact said ring, said rotators being connected to drive energy producing equipment, said rotators being constructed to rotate with said ring when said rotators are in contact therewith, thereby driving said energy producing equipment when said wind rotates said blades, a controller connected to control a speed of rotation of said turbine when said wind is sufficiently strong and to 20 independently control each contact between said rotators and said ring, said method comprising controlling said speed with varying wind conditions by adjusting one or more of a pitch of said turbine, a yaw position of said turbine, a number and force of rotators that are in contact with said ring, a number of generators that are driven by said rotators and brakes on said turbine.
- 25 14. A method as claimed in Claim 13 including the steps of controlling said speed by turning said turbine toward a direction of said wind to increase said speed and away from a direction of said wind to decrease said speed and changing a position of said turbine as said direction and velocity of said wind changes.
- 30 15. A method as claimed in Claim 14 including the steps of using said controller to constantly monitor said turbine and said wind conditions and changing said turbine with changing wind conditions.